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ABSTRACT

This document describes the Mother-Child Home Program (MCHP) for prevention of educational disadvantage, prepared by the Verbal Interaction Project. The MCHP consisted of 92 semi-weekly, half hour home sessions spread over two years by interviewers called "Toy Demonstrators". The latter were trained in non-didactic techniques to show a mother, by participating in play sessions with her and her child together, how to interact verbally to enhance the child's conceptual and socioemotional development, around commercially available toys and books as the curriculum materials permanently assigned to the child. The toy demonstrator, after involving the mother early in the home session, gradually faded into the background and the mother was left free to adopt the modeled behavior, or not. The theoretical foundation for the program is based on the premise that parents are the primary change agents or teachers of their own children. The program added to this the idea that the teaching should occur at home through concept-building verbal interaction, in play around permanently assigned stimuli, and embedded in the affective matrix of the mother-child interaction. One fundamental belief of the program is that language plays a critical role in cognitive development. The program has both affective and cognitive goals. An evaluation of four cohorts of children participating in the program from 1968-1971 indicated that the program did indeed seem to work. The children showed significant IQ gains and above norm IQ's by the end of two years. (Author/AM)

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A MESSAGE FROM HOME: FINDINGS FROM A PROGRAM FOR NON-RETARDED, LOW-INCOME PRESCHOOLERS

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by Phyllis Levenstein

Social Disadvantage of Educational Disadvantage

All children in western society require enough education to prepare for the vocational complexities of a technologically based civilization. Yet children from low-income families frequently have trouble with academic tasks when they enter elementary school. This is a cross-cultural phenomenon hardly confined to this country (Davie, Butler, Goldstein, 1972; Thorndike, 1973). Several years ago the mounting, and indeed hierarchical, nature of this educational handicap as the low-income child proceeds through higher and higher school grades was identified as a "cumulative academic disadvantage" (M. Deutsch, 1965) whose roots are already established by the time the child has entered school, compounding whatever inadequacies the school has in dealing with the problem.

Children at the high end of the mental retardation continuum, the mildly retarded, enter school at a lower level of academic functioning than those from the low-income population. Thus they may demonstrate the cumulative academic disadvantage earlier in their school careers. However, the educational problems of the low-income and the mildly retarded populations appear so similar, with even considerable demographic overlap between the two populations (Stein and Susser, 1970), as to suggest that a preventive program found effective thus far for the low-income population may have similar hopeful implications for the mildly retarded.

Family as Cognitive Resource

The prevention or amelioration of mild retardation may ultimately rest where society has its beginnings, the home. This chapter is, most literally, a

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message from home, both in its abstract sense and in some of its concrete manifestations; it comes from the homes of 93 low-income mothers who have been actively engaged in the Verbal Interaction Project's Mother-Child Home Program, in their homes, to prevent educational disadvantage in their two to four year olds. By age two, before the program began, the mean group IQ of their children, reported in many studies to be normal in infancy for all populations in this country (e.g., Bayley, 1965), had apparently already started on the downward slide to a point above the edge of retardation but one predictive of educational disability. That trend was reversed when the mothers became more directly involved in the education of their youngsters than had been hitherto allowed by poverty and insufficient awareness of the importance of such parenting behaviors as incorporating simple verbal interaction techniques into their play with the children.

The message from home is that the family, embodied in the dyadic mother-child relationship within the home, appears to provide a potent system to foster the child's cognitive development. To release the power of that system, certain crucial conditions appear necessary in an intervention program. These conditions seem to be met in the Mother-Child Home Program. That they are not all present in other systematically researched programs with a home-visit component (Gordon, 1969; Gray and Klaus, 1965; Karnes et al, 1970; Payne et al, 1973; Schaefer, 1969; Weikart and Lambie, 1968) is no more surprising than that school-based programs also differ greatly from each other. But the differences among such programs in long-term effectiveness has been recently noted (Bronfenbrenner, 1974).

Theoretical Foundations of the Mother-Child Home Program

The theoretical base of all parent-involving programs includes a belief in the profound importance of parents as primary change agents or teachers of their own children. The Mother-Child Home Program (MCHP) added to this the idea that the "teaching" should occur at home through concept-building verbal interaction, in play around permanently assigned perceptually rich and ordered stimuli, and should be embedded in the affective matrix of the child's most enduring relationships, especially that with his mother. Further, the intervention to assist this process

must be through means which provide maximum motivation for mother and child (and home intervener-visitor). It should cause minimum disturbance to their relationship, especially since the optimum time in the child's life for the intervention is between ages two to four years, partly because of the peaking then of that relationship.

These propositions were developed from an interdisciplinary, far-flung network of theory and investigations concerning the disparate, yet often intertwining, roles in the child's intellectual development of language; of early family relationships, and motivations; of sensory-motor development; of play; and of optimum age periods for intervention.

Most fundamental was a belief in the critical role of language in cognitive development and in the assumption that man's most distinctive attribute is his capacity both for abstract conceptualization and for symbolization of abstract thought through language. Sapir (1962) was among the first to pronounce language a perfect symbol system, the vocal actualization of the human tendency to see reality symbolically. He guessed that language may have originated through vocalization of the "abstract attitude", summarizing numerous concrete perceptual-conceptual encounters. This theme was expanded philosophically by Cassirer (1944) but with so many references to empirically based evidence (from the language of a central Brazil Indian tribe to the early learning of Helen Keller) as to make his discussion almost as much a far ranging review of actual observation as theoretical reflection. Werner's seminal theories of symbol formation (e.g., 1967), closely related to Cassirer's, were also supported by the work of investigators such as Vygotsky (1962) and Rapaport (1945), who cited experimental evidence for the development and greater efficiency of language as a verbal symbol system for abstracting and summarizing common traits among unlike experiences, as compared to the compilation of many concrete instances to convey a general concept. Bruner provided (1966) a useful, stage-referenced framework for viewing the development of symbolization in children by dividing the attainment of symbolic representation of reality into three steps: the enactive (to about the end of the first year of life); the iconic (imaginal predominance

which may persist in very primitive societies as a dominant mode of presentation into adult life); and finally, the symbolic, which begins when the child, who formerly employed words only as labels for immediate experience, uses words to generalize the common attributes of many such experiences and so uses words as verbal concepts.

Bruner had noted in an earlier article (1964) that the process of internalizing language as the child grows older probably depends on his interaction with others, in what was called by R. Brown the Original Word Game (1958). Bruner commented that this may end up by being the Human Thinking Game, a phrase which neatly encapsules what may well be the most important underlying function of language, superseding its communication aspects. A similarly economical summarization is furnished by Sigel's "distancing hypothesis" (1971) which elaborated Werner's observations on the function of language as an aid to abstract conceptualization. Sigel took the theory a step further by proposing that children need practice in using language to represent increasingly distant referents for their intellectual development, those most out of sight, for example, requiring the most abstract use of language.

The emphasis for this age group on the importance of language interaction with others, leads inevitably to considering the relationship of language-induced conceptual growth within the family, and the contrasting cognitive development of middle and low income children. Bernstein (e.g., 1961) was perhaps the most influential of those who suggested that patterns of limited abstract language (and syntax) exchanges in British families of working-class children might account for parallel limitations in the children's intellectual development. When Hess and Shipman tested this idea with the families of Black American middle-class and poor children, they found enough support in their data to conclude: "The structure of the social system, and the structure of the family, shape communication and language; and language shapes thought and cognitive styles of problem solving" (1965).

Whatever the constrictions on concept-building verbal interaction in low-income families, the studies detected no significant differences in the amount of warmth and affection present in middle-income and

low-income families. Observers like Bernstein, and Hess and Shipman, had noted a tendency in low-income families toward "status" orientation rather than "person" orientation, but this was a difference in social, interpersonal style, not in feeling. It was obvious that healthy mother-infant attachment was developing through the interaction of mother and child, noted as essential to this basic attachment by many investigators of family relationships, perhaps best exemplified in the studies of Bowlby (1952) and Ainsworth (1967, 1973). Increased parent-child interaction was also functional for monkeys (Harlow, Harlow, and Suomi, 1971; Ruppenthal, Harlow, Eisele, Harlow, and Suomi, 1974). Indeed the quality of that interaction may well influence the quality of the child's development of competence (Ainsworth and Bell, ERIC reports). This appears to be especially true in relation to language development (Eveloff, 1971). It is noteworthy that an early home-centered intervention program (Irwin, 1960) demonstrated its effects on language through the mother's reading stories to her child, thus utilizing the enhancement of mother-child interaction in its conative as well as cognitive aspects. Many mothers, particularly those of the college educated, middle-income group, carry on such "intervention" spontaneously, as part of a now well-known "hidden curriculum" of the family. Increased cognitive development results for the child. Schaefer, indeed, suggested that early, basic informal home education be given a name -- "Ur-Education" -- and be recognized as a legitimate supplement to conventional academic education (1970). Implicit in the concept is the inseparability of the mother-child emotional interchange from the cognitive interaction, and intermingling of cognitive stimulation and deepening of the attachment between the mother and child. The futility of trying to separate the two factors conceptually in their deprivation consequences seemed amply demonstrated by Bronfenbrenner, in his meticulously documented review of the effects of early deprivation on humans and animals (1968).

One of the most remarkable and valuable features of "Ur-Education" is that the Teacher (mother) and Student (child) involved in it need little incentive beyond the interaction itself and the activities attached

to it, so strong is the motivation provided by what Bronfenbrenner once noted as "that irrational affect called love". But certainly the interaction, and especially the verbal interaction, will be very much reinforced by stabilizing a "situation" (Cazden, 1970) rich in potentialities for encouraging conversation and its concomitants, for development of sensory-motor skills in the child through "reafference" (sensory feedback accompanying self-initiated movement, described by Held, 1965), for utilizing and encouraging the child's intrinsic motivation to master the environment (Hunt, 1961, 1969; White, 1963) in his play. The child's intrinsically motivated play, self-motivated and self-rewarding (Ellis, 1973; Millar, 1968) is probably also self-teaching. The child's problem-solving, using materials with many motor, perceptual, and conceptual properties, matched to his maturational stage, can, in itself, benefit cognitive development (Bruner, 1972; Hunt, 1969). It seems obvious that the "situation" should be playful, and should be centered about durable, attractive toys and picture books, owned by the child so that they can be used again and again, with constant reinforcement of the intermingling of the conative and the cognitive (especially the verbal).

The interaction between mother and child, embedded in the attachment relation between them, is a major component of the cognitive stimulation of the child, which has its inception almost at the infant's birth. If verbal interaction is a central feature of the cognitive stimulation, the full effects of the cognitive stimulation begin to have their impact as the child is emerging from the stage where sensory-motor learning is predominant into the period of what Cassirer called "reflective intelligence", signaled and reinforced by beginning language development. This occurs at about age two years. This age also coincides with heightened attachment to mother (Maccoby and Feldman, 1972); with greatly increased curiosity about the environment; with developing sophistication in the use of limbs for ambulation and manipulation -- in short, with a near explosion of rapidly developing skills and feelings. By about four years the child has incorporated the main effects of this revolution and begins to be impatient to turn to experiences outside of the mother-child relationship (Bronfenbrenner, 1968). If the cognitive possibilities of this age period

have for some reason not been fully exploited, perhaps because of the constrictions put on parents by poverty, then the child's intellectual development may already have taken the downward turn which is so handicapping to academic achievement (e.g., Bloom, 1964). Logic and the evidence seem overwhelmingly to indicate that intervention to prevent that cognitive dip should occur between the ages of two and four years, as the optimal, and possibly critical, period for preparation for school learning.

Response from the Professional Field

A little more than a decade ago, tremendous impetus was given to the whole field of early childhood intervention research by the appearance of Hunt's review of the role of environment in the growth of individual intelligence (1961). It promised new hope for the prevention of the personal tragedy and social problems generally posed by the educational disadvantage of the poor. Attempts were made to provide, in carefully structured preschool learning centers, duplications of what one major investigator aptly called the "optimal learning environment": The child in his own home, within the context of a warm and nurturant emotional relationship with his mother or a reasonable facsimile therof, under conditions of varied sensory and cognitive input (Caldwell, 1967).

The long-term effectiveness of such centers, as well as of the home-based programs mentioned earlier, was often found to be social rather than cognitive when follow-up results, which were sometimes made equivocal by research termination (e.g. Karnes et al, 1970; Palmer, 1969), were available. As the need to intervene directly with parents was thought to be more evident, parent education groups arose to prominence as an intervention method; but their impact on the low-income population was disappointing (Chilman, 1973).

Curiously, the center-based intervention program which appeared to have the greatest impact, impressively documented as lasting into adult years, was one from the thirties, in which the "parents" (retarded, adult, institution-mates of very young retarded children) were given little

training or direction, yet provided for the children ample conative, verbal and cognitive stimulation (Skeels, 1966). This seemed a broad hint to the Verbal Interaction Project not only to operationalize through the Mother-Child Home Program the theoretical propositions elaborated above, but to introduce the program into the family with the least disruption possible to child and family. A careful attempt was made to work out a delicate balance in the program between building sufficient structure to turn theory into concrete program reality, while preserving, to a maximum degree, the autonomy of the mother and the intactness of the family's interpersonal relationships. The general aim of the ur-education to be fostered by the program could be summarized by a paragraph from Bronfenbrenner's recent review of early childhood education research:

> In the early years of life, the psychological development of the child is enhanced through his involvement in progressively more complex, enduring patterns of reciprocal, contingent interaction with persons with whom he has established a mutual and enduring attachment (Bronfenbrenner, 1974).

The Program

The Mother-Child Home Program (MCHP) was created and researched by the Verbal Interaction Project (VIP), starting with a pilot study in 1965, (Levenstein and Sunley, 1968). The program had developed by 1968 into its current form, after its first full year of operation in 1967-68 (Levenstein, 1970). Its goals are cognitive and affective. They are aimed at supporting the mother (and through her, the family) in fostering the intellectual and socioemotional development of her child. The following general conditions were met by the program as a means of actualizing its theoretical base. It:

-- was conducted in the home;

-- addressed the mother-child dyad as an interacting, mutually supportive social system;

-- began when the child was two years of age and continued to age four;

-- actively involved the mother without teaching, counseling, or subtly coercing her;

--assigned permanent toys and books as self-motivating, stable curriculum materials as the focus of verbal interaction techniques;

-- employed these toys and books to demonstrate to the mother a simple, structured yet flexible curriculum of verbal interaction techniques;

-- provided non-didactic home interveners to model the curriculum techniques and use of the curriculum materials;

Extrapolating the social implications of the theory, the VIP anticipated feasibility for implementation outside of the research project by keeping the program simple and eliminating requirements of formal education, previous special skill, or particular charisma for the home visitors.

The method is described in detail in Levenstein, in press; in Levenstein and Levenstein, 1971; in a Manual (Levenstein, 1973); and in a repetitive, cumulative curriculum called "The Toy Demonstrator's VISIT Handbook" (Levenstein, 1970-1974). Briefly, the MCHP consisted of 92 semi-weekly, half-hour Home Sessions spread over two years, by interveners called "Toy Demonstrators". The latter were trained in non-didactic techniques to show a mother, by participating in play sessions with her and her child together, how to interact verbally to enhance the child's conceptual and socioemotional development, around commercially available toys and books as the curriculum materials permanently assigned to the child. The Toy Demonstrator, after involving the mother early in the Home Session, gradually faded into the background; the mother was free to adopt the modeled behavior, or not, as she wished.

The 46 Home Sessions during each year roughly followed the local school calendar for a total of about seven months from October to May. Altogether the program required about 23 clock hours of the dyad's time with a Toy Demonstrator each year, aside from the time mothers might spend outside of sessions playing and reading with their children each day (suggested but not stressed to the mothers). The cost of thus giving low-income mothers the materials, and access to the techniques, of the "hidden cognitive curriculum" of some middle-income families, was estimated at about $400 a year for each child. The cost could be kept relatively low because it included the free manpower of the mothers acting as their children's main teachers, and the free working space contributed by the participating families.

The Toy Demonstrators were paid former mother-participants, of high-school education; and unpaid woman volunteers, usually college educated. They were trained together in an initial training workshop, and in weekly group supervisory conferences throughout the program year. Twelve books and eleven toys, selected on 26 explicit criteria by VIP staff, were given to the mother for the child each year, in a planned weekly sequence of increasingly complex curriculum materials. The Toy Demonstrator modeled verbal interaction techniques, and interpersonal behavior functional to learning, focused around the toys and books (called Verbal Interaction Stimulus Materials, or "VISM"), using as the structured cognitive curriculum a different guide sheet for each VISM. The "curriculum" actually consisted of a list of concepts and behaviors which remained the same on every guide sheet but were illustrated and elaborated differently by each toy or book which formed the content of each new guide sheet. The chief lesson conveyed to the Toy Demonstrator in supervision was that the program was aimed more at the mother than at the child. The main and enduring responsibility for the child's education at this age must be the mother's, not the Toy Demonstrator's. Therefore, ability to eliminate herself early as an active participant from Home Sessions was her best sign of success.

Research Data: The Message from Home

Since 1968, each September a new group of children was pretested by the Verbal Interaction Project (Cattell, Binet, Peabody Picture Vocabulary Test) and enrolled in the full, two-year MCHP, to be post-tested two years later, after completion of the program. By June of 1973 the 93 mothers and children mentioned earlier had participated in the MCHP, in four successive yearly cohorts (1968, 1969, 1970, 1971). All were of low-income, with the usual cluster of demographic attributes characteristic of this SES, and with the cohorts ranging in ethnic composition from 70% to 100% Black.

The research of the program's cognitive and socioemotional effects included the goals indispensable to intervention evaluations: tests of internal validity ("Does it work in the research project?") and of external

validity, or generalization ("Will it work in other settings?"). The measures used to answer these questions were standardized and project-developed tests of the cognitive and affective development of treated and untreated children.

But the research also went beyond these goals. It was concerned with the feasibility (including quality control) of the program in other settings and with other low-income populations than those of the project. And it was also concerned with the desirability of the program, not only in terms of its attractiveness to the target low-income population, but in relation to the values of a democratic society. Since the issues of feasibility and desirability are of pivotal importance to the social usefulness of an intervention program, no matter what the significance of the basic research findings, the VIP attempted to carry a triple burden from the beginning. The program had to be developed for acceptability to the target population and to society; for the possibility of broad and perhaps national implementation; and the research data had to warrant dissemination.

• The results for the four cohorts of children entering the two-year Mother-Child Home Program from 1968 to 1971 indicate that the program did indeed seem to work. The children showed significant IQ gains and above norm IQs by the end of the two years.

Insert Table 1 about here

These short-term results remained stable for the two cohorts (1968 and 1969) which had entered kindergarten and first grade at the time of the fourth annual follow-up study, conducted from November 1972 to March 1973. The mean IQ was 105.4 for the group in which the majority had reached first grade, and at 113.3 for the group in which most were in kindergarten. On the other hand, a group of first grade children (Group C_5), recruited in 1972 for participation as an "after only" untreated group with no previous contact with the VIP but matched to the 1968 treated cohort (Group T_1) on the same low-income criteria met by the treated groups, demonstrated a much lower IQ mean, 91. (The low-income criteria were eligibility for low-income housing, residence in rented housing, parents not above 12th grade education and semi-skilled occupation.)

Moreover, when the two matched groups were compared with each other, the treated T_1 group was found to be significantly superior to the untreated C_5 group, not only in general IQ but also in other cognitive areas: verbal IQ, reading achievement, and arithmetic achievement.

Insert Table 2 about here

The two groups also differed significantly in socioemotional coping skills, as rated by their classroom teachers, who were unaware of the treated or untreated status of the children, on an instrument developed by the Verbal Interaction Project. The latter was the "Child's Behavior Traits", a 20 item, criterion-based, Likert-type scale yielding a summative score ranging from 20 to 100, with a score of 60 indicating generally "moderate" presence of coping skills. The treated T_1 Group scored significantly higher than the untreated C_5 Group on the CBT. (The split-half reliability coefficient for the CBT was .97, indicating the very high internal consistency of the instrument. It is currently being tested for inter-rater reliability, and for validity.)

These findings must be viewed with some reserve, since they were based on a quasi-experimental research design (Campbell and Stanley, 1963), with subjects not randomly selected, but recruited from the populations of two low-income housing projects, and from referrals by local social agencies (e.g., social workers of Headstart programs and public health nurses). All families had to meet low-income criteria, and the acceptance rate of eligible families was high, at least 80% each year. The fact remains that without random assignment of individuals to treated and untreated groups, the conditions of a true experiment were missing, and thus it cannot be said with a high degree of confidence that the differences between groups were due only to treatment effects. In view of the possible import of the findings, this caveat must be taken seriously and not as a standard academic disclaimer. The basic requirement of random assignment of subjects to different conditions is now being met for 50 children (25 treated and 25 untreated) in the 1973-1974 cohort, and it remains to be seen whether similar outcome differences within and between treated and untreated groups will be found.

Replication Outside of the Verbal Interaction Project

To study the generalizability of the method's effectiveness, the Mother-Child Home Program is now being tested outside of the research project, in ten states of the country, from Alaska to Maine. The research project's Demonstration Center has been guiding its replication at 30 locations, in a variety of organizational settings, such as schools, family service agencies, churches, mental health clinics, and American Indian reservations. The replications provide feedback of demographic data on their samples, and of before-after IQs to measure the replications' effectiveness and thus answer the question of the external validity of the model program's effectiveness. At the same time, the replications provide a practical test for the feasibility of applying the program in settings with fewer resources than the research project. For example, a replication is not likely to be staffed by personnel with the specialized skills and long program experience of the research project's team.

IQ data have been analyzed from the first eight replicators (1970-1972). Their combined pre-post IQ differences after one and two years were similar to those of the model program's sample, using the same measures (Cattell and Stanford-Binet): about 15 IQ points for combined replication results after two years, and about 17 points for children in the model program during the same year. Again a word of caution is in order. The range of IQ differences among the replications was wide, immediately suggesting that the program had varying effects on different target populations among the poor. But important factors obscured the reliability of these test results. The Ns in most of the replications were very small; and the comparability, in terms of skill and experience, of the psychologists who examined the children came into question when actual protocols were scrutinized with some attention. It became clear that it was difficult to know which of three replication variables was influencing the results: small Ns, uneven tester performance, or actual differences in program effectiveness. To remedy the first two factors, replications have enrolled larger numbers of subjects this year (1974); and the testing procedures for seven of the replications are being closely monitored for reliability by an outside testing agency, the Educational

Testing Service of Princeton, New Jersey. By July, 1976, the replication results should lend themselves to clearer interpretation.

However, the labor of the project's Demonstration Center in this pilot dissemination experience has already yielded a great deal of valuable information about the feasibility and the desirability of the program's broad implementation. Some of it is bad news, but most of it is good. The bad news is that organizations are often prevented by lack of money from adopting the program for large enough numbers of children to demonstrate program effects reliably; and that even when they do, the maintenance of model program standards, though effective in almost all replications, requires hard work.

The good news is in the areas of both desirability and feasibility. In terms of desirability, the program appears to be as attractive to dyads reached by replications as it is to the project sample. It is received enthusiastically both by the dyads and by the sponsoring organizations. Also, the individualized dissemination techniques developed by the Demonstration Center (Levenstein, Kochman and Roth, 1973) appear to preserve the low-key, low-pressure nature of the intervention as well in replication as in the model MCHP, so as to interfere minimally with family privacy, style, and autonomy. This is an approach which I believe is not only necessary for effectiveness but which is also congruent with a democratic society's respect for human values and human beings. Stanley Milgram's (1974) sobering studies at Yale, on obedience to authority, underscore the social risks of too easily gaining mothers' cooperation with a program which can destroy the privacy of their homes; and they also vividly illustrate the covert sabotage which can occur when mothers give surface obedience to accepting a program they don't really like. Against these dangers, the Mother-Child Home Program has incorporated explicit safeguards which seem to work in replications as well as in the model program.

The feasibility of the program is also good news. Though difficult, it does seem possible, at a financial cost similar to the model program's, to maintain program quality control, through firm guidelines

and through personal training and monitoring of replication coordinators. The program's techniques, curriculum, and materials appear to be transmittable, and they are used effectively under the direction of Coordinators trained at the VIP Demonstration Center, by a wide variety of personnel throughout the country, trained as Toy Demonstrators. A large number of well established organizations, with demonstrated capacity to provide program stability, are enthusiastic about the program and are willing to support it. Many more have indicated they would do so if they had minimal financial supplementation from government or other sources. In short, the dissemination of this family enhancing program appears to be socially feasible.

Some questions remain to be answered. Will future out-of-project replications return more reliable demonstrations of program effectiveness? Will the 1968-1971 graduates continue to show long-range effects? Will the outcome data repeat the findings for these four cohorts when collected from new groups within a true experimental design? Yet, the data even at this point in time may warrant consideration of the program's applicability to other populations vulnerable to educational disadvantage, such as the mildly retarded.

A re-phrasing of the "message from home" appears to be that a surprisingly small amount of intervention geared specifically (and respectfully) to tapping the mighty resources of the mother-child interactional system within the family has had relatively strong and long-lasting effects for children with normal capabilities. Perhaps the same can be true for many mentally retarded children as well.

TABLE 1

COMPARISONS OF TREATED AND CONTROL GROUPS, BY I.Q. 1968-1973

Entry Year	Group and Program	Pretest	Number of Months After Pretest					Control Group
			8	20	28	40	52	
1968	T_1 IQ	90.4	101.8**	109.0**	108.3**	107.3**	105.4**	
	N = 21 SD	9.1	9.0	8.5	11.1	11.6	13.0	
1969	T_6 IQ	88.8	105.6**	108.2**	- - - -	113.3**	- - - -	
	N = 23 SD	13.8	16.5	15.6	- - - -	15.9	- - - -	
1970	T_8 IQ	90.0	106.4**	106.9**	- - - -	- - - -	- - - -	
	N = 23 SD	9.6	15.1	13.1	- - - -	- - - -	- - - -	
1971	T_9 IQ	91.6	105.8**	108.1**	- - - -	- - - -	- - - -	
	N = 26 SD	13.0	9.8	9.4	- - - -	- - - -	- - - -	
1972	C_5 IQ	- - -	- - - -	- - - -	- - - -	- - - -	- - - -	91.0
	N = 30 SD	- - -	- - - -	- - - -	- - - -	- - - -	- - - -	11.5

** p is less than .01

Table 2

Comparison of Matched Two-year Treated (T_1) and Untreated (C_5) Groups on Cognitive and Socioemotional Measures at Follow-up. 1972-1973

Measures	T_1 Group 1968 2-Year Treated N	Mean	S.D.	C_5 Group 1972 Tested "after only" N	Mean	S.D.	Difference of means Score	Value of t	p <
Stanford-Binet and WISC: General IQ	21	105.4	13.0	30	91.0	11.5	14.4	4.18	.01
Peabody Picture Vocabulary Test: Verbal IQ	21	97.6	13.6	30	89.7	11.6	7.9	2.22	.05
Reading Standard Score*, Wide Range Achievement Test	15[a]	103.9	7.7	30	95.0	12.9	8.9	2.45	.02
Arithmetic Standard Score*, Wide Range Achievement Test	15[a]	106.0	13.3	30	95.0	13.9	11.0	2.55	.02
Child's Behavior Traits, raw score: socioemotional coping skills	21	77.2	16.7	30	66.1	15.9	11.1	2.41	.02

*As calculated in Schaie and Roberts, 1970.

[a]Six Ss were too young for the age-based standard scores

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